

REMARKS

Claims 1, 4-7, 10-16, 18, 21-23, 26, 27, 29, 30, and 32-34 are pending in the application and are at issue. No claim has been amended in this response.

This response is submitted in accordance with 37 C.F.R. §1.116(a) and §1.116(b) in order to present the rejected claims in a better form for allowance or appeal. The amendment is necessary to eliminate rejections under 35 §102(b) and 35 U.S.C. §103. This response was not presented earlier because applicants believed, and still believe, that all outstanding issues were addressed and overcame in Amendment "A," filed August 1, 2007. This response should be entered because it places the application in better form for allowance or immediate appeal, and the amendment does not require further searching or present any new issues.

REJECTION BASED ON EP 0 777 287

Claims 1 and 4-6 stand rejected under 35 U.S.C. §102(b) as being anticipated by EP 0 777 287 (EP '287) based on the contention that of EP '287 discloses the ester F of claim 1. Applicants traverse this rejection.

Proper Basis for a §102(b) Anticipation Rejection

"Anticipation requires a showing that each limitation of a claim is found in a single reference, either expressly or inherently." *Atofina v. Great Lakes Chemical Corp.*, 441 F.3d 991, 999 (Fed. Cir. 2006).

When a claim recites a limitation as a range of numerical values, a reference must describe the range with sufficient specificity to anticipate. *Atofina*, 441 F.3d at 999-1000. Disclosed ranges that only slightly overlap a claimed range do not describe the range with sufficient specificity. See *id.* (reversing findings of anticipation on the basis that (1) a disclosed temperature range of 150 to 350°C only slightly overlapped a claimed range of 330 to 450°C, and (2) a disclosed concentration range of 0.001 to 1.0% only slightly overlapped a claimed range of 0.1 to 5.0%); *Ex parte Hayashi*, 2007 WL 1874815, *5-6 (B.P.A.I. 2007) (Appeal No. 2007-0665) (reversing an anticipation rejection, finding that a disclosed

thickness range of about 100 nm to 500 nm, absent any specific examples less than 100 nm, failed to describe a claimed thickness range of less than 100 nm with sufficient specificity). Further, a reference disclosing a range that is very close to (but which does not overlap or touch) the claimed range does not anticipate the claimed range. MPEP §2131.02(II)(8th ed., Rev. 6, Sept. 2007) (citing *Titanium Metals Corp. v. Banner*, 778 F.2d 775 (Fed. Cir. 1985)).

The disclosure of a genus in the prior art is not necessarily a disclosure of every species that is a member of the disclosed genus. *Atofina*, 441 F.3d at 999. In particular, the disclosure of a range does not constitute a specific disclosure of the endpoints of that range. See *id.* at 1000 (noting that a disclosed range of 150 to 350°C was neither a disclosure of 150°C nor 350°C); see also *Hayashi* at *6 (finding it irrelevant that the lower limit of "about 100 nm" or the disclosed thickness range could be interpreted to include thicknesses within the recited range of "less than 100 nm"); *Ex parte Hayes*, 2007 WL 49708, *9 (B.P.A.I. 2007) (Appeal No. 2006-0990) (noting that end points of a disclosed range do not reflect "data points" for anticipation determination).

With further respect to a rejection under 35 U.S.C. §102(b), MPEP §2131 states:

"TO ANTICIPATE A CLAIM, THE REFERENCE MUST TEACH EVERY ELEMENT OF THE CLAIM"

'A claim is anticipated only if each and every elements as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.' *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)...'The identical invention must be shown in as complete detail as is contained in the...claim.' *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. In *re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990)."

In addition, MPEP §2131.03 II. states:

"PRIOR ART WHICH TEACHES A RANGE WITHIN,
OVERLAPPING, OR TOUCHING THE CLAIMED RANGE
ANTICIPATES IF THE PRIOR ART RANGE DISCLOSES

THE CLAIMED RANGE WITH "SUFFICIENT
SPECIFICITY"

When the prior art discloses a range which touches, overlaps or is within the claimed range, but no specific examples falling within the claimed range are disclosed, a case by case determination must be made as to anticipation. In order to anticipate the claims, the claimed subject matter must be disclosed in the reference with "sufficient specificity to constitute an anticipation under the statute." What constitutes a "sufficient specificity" is fact dependent. If the claims are directed to a narrow range, the reference teaches a broad range, depending on the other facts of the case, it may be reasonable to conclude that the narrow range is not disclosed with "sufficient specificity" to constitute an anticipation of the claims. The unexpected results may also render the claims unobvious. The question of "sufficient specificity" is similar to that of "clearly envisaging" a species from a generic teaching. See MPEP § 2131.02. A 35 U.S.C. 102/ 103 combination rejection is permitted if it is unclear if the reference teaches the range with "sufficient specificity." The examiner must, in this case, provide reasons for anticipation as well as a motivational statement regarding obviousness. *Ex parte Lee*, 31 USPQ2d 1105 (Bd. Pat. App. & Inter. 1993) (expanded Board). For a discussion of the obviousness of ranges see MPEP § 2144.05."

Two recent CAFC decisions support the reasoning stated in MPEP §2131.03 II. In *Eli Lilly & Co. v. Zenith Goldline Pharm. Inc.*, 81 U.S.P.Q. 2d, 1324 (Fed. Cir. 2006), the court stated that for a reference to anticipate a claim, the reference must *expressly* spell out a definite and limited class of compounds that enable a person skilled in the art to at once envisage each member of this limited class.

In *Impax Labs, Inc. v. Aventis Pharma Inc.*, 468 F.3d 1366 (Fed Circ. 2006), the court stated that the prior art patent disclosed such a large number of compounds that one of ordinary skill in the art would not have recognized that the claimed compound was useful to treat a disease without additional details or guidance, which was not found in the prior art patent.

Proper Basis for §103(a) Rejections

A determination that a claimed invention would have been obvious under §103(a) is a legal conclusion involving four factual inquiries: (1) the scope and content of the prior art; (2) the differences between the claimed invention and the prior art; (2) the differences between the claimed invention and the prior art; (3) the level of ordinary skill in the pertinent art; and (4) secondary considerations, if any, of non-obviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966). Secondary considerations of non-obviousness include factors such as commercial success, long-felt but unresolved needs, the failure of others, and/or *unexpected results achieved by the claimed invention*. *Id.* Obviousness is determined from the vantage point of a hypothetical person having ordinary skill in the art which the claimed subject matter pertains, who is presumed to have all prior art references in the field of the invention available to him/her. In *re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998). Furthermore, obviousness must be determined as of the time the invention was made and in view of the state of the art that existed at that time. *Uniroyal Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 1050-51 (Fed. Cir. 1988).

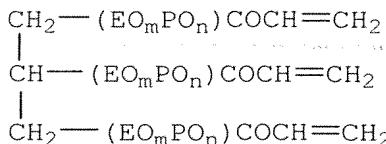
The Patent Office must clearly articulate facts and reasons why the claimed invention "as a whole" would have been obvious to a hypothetical person having ordinary skill in the art at least as of the claimed invention's effective filing date. *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007) (citing with approval *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) ("[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness."))' see also MPEP §2143 ("The key to supporting any rejection under 35 U.S.C. §103 is the clear articulation of reason(s) why the claimed invention would have been obvious.").

To reach a proper determination under 35 U.S.C. §103(a), the examiner must step backward in time and into the shoes worn by the hypothetical "person of ordinary skill in the art" when the invention was unknown and just before it was made. In view of all factual information, the examiner must then make a determination whether the claimed invention "as a whole" would have been obvious at that time to that person. Knowledge of applicants' disclosure must be put aside in reaching this determination, yet kept in mind in

order to determine the "differences," conduct the search, and evaluate the "subject matter as a whole" of the invention. The tendency to resort to "hindsight" based upon applicants' disclosure is often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the *facts* gleaned from the prior art. MPEP §2142.

Disclosure of EP '287

The EP '287 rejection is based on formula (2), i.e., the *sole* glycerin-based compound of EP '287, having a formula:



wherein m and n do not represent 0 at the same time and $0 \leq n$ and $0 \leq m$ (EP '287, page 4, line 32). Accordingly, either EO or PO can be absent from the compound, and *no* "upper limit" exists for m, n, or the sum of m+n.

In the examples of EP '287, the sole example directed to a glycerin-based compound is Embodiment 4, wherein n=8 and m=0, illustrated as compound (7) at page 8 of EP '287. This compound is (a) *free* of PO units, (b) contains a sum of 24 EO units, and (c) is free of PO units

It further must be noted that EP '287 is directed to non-aqueous electrolyte batteries having a negative electrode coated with a polymer film prepared from the compounds disclosed in EP '287. The EP '287 reference fails to teach copolymerization of the disclosed compounds, fails to suggest the compounds as a crosslinker for monoethylenically unsaturated monomers, and is in no way related to superabsorbent polymers (SAPs) and a reduction of residual monomers in the production of SAPs.

Patentability of Claims 1 and 4-6 over EP '287.

For the reasons set forth herein, it is submitted that EP '287 fails to anticipate present claims 1 and 4-6 under 35 U.S.C. §102(b), and that claims 1 and 4-6 would not have been obvious over EP '287 under 35 U.S.C. §103.

Present claims 1 and 4-6 are directed to an ester F that *requires* the presence of *both* PO and EO units in *each* of the three alkylene oxide chains of the claimed glycerin compound. In addition, total number of EO and PO units in a claimed ester F (not in each alkylene oxide chain) is 3, 4, or 5, as recited. It is submitted, therefore, that even though the very general, broad teachings of EP '287 may read on a presently claimed ester F, EP '287 does not anticipate claims 1 and 4-6 under 35 U.S.C. §102(b).

EP '287 discloses an infinite number of compounds because no upper limit is placed on either variable "m" or "n". In addition, either "m" or "n", but not both, can be zero. The reference therefore fails to disclose the compounds therein with any specificity. Obviously, the general teachings of EP '287 are to a broad a range of compounds, including both glycerin-based compounds and trimethylolpropane-based compounds.

The *sole* specific example of EP '287 directed to glycerin-based compounds is compound (7) which contains 24 EO groups and no PO groups. Accordingly, EP '287 fails to disclose any specific examples within the claimed range, i.e., a glycerin-based compound containing *both* EO and PO groups, wherein the sum of EO and PO is in the claimed narrow range of 3 to 5.

As set forth in the MPEP §2131, the present claims are directed to a narrow range within the wide range of the reference, and wherein the reference fails to disclose a specific example within the claimed range. It is submitted therefore that EP '287 fails to disclose the claimed subject matter with sufficient specificity to constitute an anticipation under 35 U.S.C. §102(b).

To further demonstrate the EP '287 fails to anticipate claims 1 and 4-6, and that EP '287 fails to render those claims obvious under 35 U.S.C. §103, the presently claimed esters exhibit unexpected benefits in the preparation of superabsorbent polymers (SAPs).

In the present specification, Table 1 at page 51 includes seven esters (a through g) that are used as crosslinkers in the preparation of a superabsorbent polymer (SAP). Examples f and g are comparative in that they (a) are based on trimethylolpropane (TMP), (b) contain only EO units, and (c) contain more than a total of 5 EO and PO groups, i.e., Example g. Examples c-e are esters of the present claim 1, i.e., based on glycerin, contain EO and PO units, and contain a total of up to 5 PO and EO units. Comparative Example g is the most similar example to the EP '287 disclosure, i.e., based on TMP, containing only EO units, and containing 15 EO units. See Embodiment 1 of EP '287, based on TMP and containing 18 EO units and no PO units. The only embodiment of EP '287 based on glycerin contains *only* EO and the total number of EO units is 24.

The data in Table 2 of the specification shows that claimed esters c-e provide an SAP having a very low crosslinker residue (over replicate tests) of from less than 5 to 10 ppm. In contrast, a crosslinker based on TMP and containing 15 EO units (i.e., g) provided in SAP having a 20 to 51 ppm crosslinker residue. A comparative crosslinker based on TMP and containing 3 EO units provided on SAP having 857 to 1302 ppm of residual crosslinkers.

In addition, the claimed esters c-e provided SAPs having a VSI value (saponification index) of 7.5 to 9.5. Comparative TMP-based esters f and g demonstrated a VSI value of 36.9 and 11.6, respectively.

The presently claimed esters therefore show unexpected results with respect to crosslinker residue, which ideally is zero to avoid free monomers in the resulting SAP or the need to perform a method step to remove the crosslinker residue. Unexpected results also are demonstrated with respect to VSI values. As stated in the specification, an ideal crosslinker has a VSI of zero because then all crosslinking is performed during the reaction, as opposed to during a drying step. In turn, the properties of the SAP are not altered by the drying process. See specification, page 50, lines 1-6.

In addition, the test data discussed above shows the unpredictability in the art. In particular, changing from glycerin to TMP, excluding PO, or containing more than 5 total EO and PO groups, result in crosslinking agents that vary considerably with respect to

residual monomers remaining after a polymerization. It is the presently claimed compounds, i.e., based on the glycerin, containing both EO and PO, and 3 to 5 total EO/PO moieties that provided the unexpected results. These results could not have been predicted from the disclosure of EP '287.

In view of the broad disclosure of EP '287, including (a) trimethylolpropane and glycerin-based triacrylates, (b) that the disclosed compounds can be free of either EO or PO units, (c) that the number of disclosed compounds is infinite (i.e., $m \leq 0$ and $n \leq 0$), (d) that the examples are primarily directed to TMP-based compounds, and (e) that the only glycerin-based example contains 24 EO units only, *and* the unpredictability in the art, it is submitted that EP '287 cannot anticipate claims 1 and 4-6 under 35 U.S.C. §102 (b) or render claims 1 and 4-6 obvious under 35 U.S.C. §103.

The present claims are closely tailored to be based on glycerin, contain EO and PO units, and contain a total *sum* of EO and PO units of 3, 4, or 5, wherein the esters demonstrate unexpected results with respect to performing as a crosslinking agent for an SAP. EP '287 fails to disclose the presently claimed esters with any specificity. EP '287 also provides no direction, guidance, or apparent reason for a person skilled in the art of SAPs to select the narrow range of claimed compounds from the infinite number of compounds in the reference (which is directed to a non-aqueous electrolyte secondary battery) with any reasonable expectation of providing a crosslinker for SAPs having unexpectedly improved properties over SAPs crosslinked with other esters also broadly disclosed in EP '287 and closer in structure to the examples of EP '287.

For all of the reasons set forth above, it is submitted that claims 1 and 4-6 are not anticipated under 35 U.S.C. §102(b) by EP '287 and that the rejection should be withdrawn. It is further submitted that claims 1 and 4-6 would not have been obvious to a person skilled in the art under 35 U.S.C. §103.

REJECTIONS BASED ON BARTHOLD U.S. PATENT NO. 5,472,617

Claims 7 and 10 stand rejected under 35 U.S.C. §102(b) as being anticipated by Barthold et al. U.S. Patent No. 5,472,617 ('617). The examiner bases this rejection on the

contention that the '617 patent purportedly discloses stripping with a gas which is inert under the reaction conditions. Applicants traverse this rejection.

First, the examiner is reminded that the references must render the invention obvious *as a whole* in order to support a rejection under 35 U.S.C. §103. In this regard, note that claim 7 recites a process for preparing an ester F in the presence of a molar excess of (meth)acrylic acid to alkoxylated glycol of at least 3.15:1. In contrast, the '617 patent specifically teaches that a molar excess of (meth)acrylic acid should be *avoided*. See '617 patent, column 4, line 63 through column 5, line 1. The examiner has completely ignored this claimed feature of excess (meth)acrylic acid, and as a result has failed to consider the invention as a whole. Also see claim 10, wherein no more than 75% of the excess (meth)acrylic acid is removed from the reaction mixture, and claim 13, which recites a molar excess of (meth)acrylic acid to alkoxylated glycol of at least 15:1.

With respect to the claimed feature of stripping with a gas, at column 10, line 52 through column 11, line 2, the '617 patent discloses *reacting* an alkoxylated alcohol with acrylic acid "under a nitrogen blanket". This is not equivalent to the stripping step i) recited in claim 7. Note that the nitrogen blanket in the '617 patent is applied *during* the reaction between the alkoxylated alcohol and the acrylic acid. The disclosed "nitrogen blanket" is not performing a stripping function, but, as well known in the art, is applied over a reaction mixture in the '617 patent to *preclude* the introduction of oxygen into the reaction system.

The presently claimed stripping step i) is performed *after* the reaction between the alkoxylated glycol and the (meth)acrylic acid to form the ester F. The '617 patent teaches a nitrogen blanket over a reaction utilizing alkoxylated trimethylolpropane, which alone is a difference that precludes a rejection under 35 U.S.C. §102(b). The fact that the '617 patent teaches a nitrogen blanket during polymerization, rather than stripping *after* polymerization is another difference between claim 7 and the '617 patent disclosure.

One major difference between claim 7 and the '617 patent is that "stripping" is different from a "nitrogen blanket". Applicants previously provided the examiner with *Hawley's Condensed Chemical Dictionary, Thirteen Ed.* (1997), page 1052, containing a definition of "stripping" showing that the term refers to the *removal* of volatile components

from a liquid mixture by the passage of a gas through the liquid mixture. This stripping removes a solvent from the reaction mixture *after* the polymerization.

Still another major difference between the '617 patent and claim 7 is that the stripping is performed using an "oxygen-containing gas", as presently recited in amended claim 7. An oxygen-containing gas is utilized in the stripping step to maintain the inhibitory capabilities of a compound like MEHQ during solvent removal, i.e., to inhibit premature polymerization of the formed ester F. It is well-known in the art that oxygen must be present to maintain this polymerization inhibitory capability. Applicants also previously submitted to the examiner, an excerpt from "Modern Superabsorbent Polymer Technology" (1998), page 39-44, showing the influence of oxygen on polymerization inhibition.

The '617 patent utilizes a nitrogen blanket to help *remove* oxygen from the reaction system, such that the inhibition capabilities of MEHQ are reduced and the polymerization can proceed. Accordingly, the "nitrogen blanket" of the '617 patent and the "stripping" step are not identical (e.g., are performed at different steps of the reaction and perform different functions), and the '617 patent differs from claims 7 and 10 such that a rejection under 35 U.S.C. 102(b) cannot be sustained.

Finally, the '617 patent fails to teach or suggest a mole excess of at least 3:15:1 of (meth)acrylic acid in the reaction mixture. The '617 patent fails to consider or address using such mole excess of (meth)acrylic acid, and provides no apparent reason for a person skilled in the art to use such a molar excess of (meth)acrylic acid. In contrast, the '617 patent, at column 4, line 63 through column 5, line 1, specifically teaches a 1:1 molar ratio (per hydroxyl group of the alcohol) of oxyalkylated alcohol to (meth)acrylic acid, and that an excess of (meth)acrylic acid should be avoided.

The '617 patent fails to teach every feature of claims 7 and 10, and, in fact, fails to teach more than one feature of claim 7. Claims 7 and 10, therefore, cannot be anticipated by the '617 patent. Claims 7 and 10 also would not have been obvious under 35 U.S.C. §103 over the '617 patent. The '617 patent fails to teach or suggest a solvent stripping step, or using an excess molar amount of (meth)acrylic acid, let alone both claimed features, *and* fails to provide any apparent reason for performing such steps.

The examiner also has failed to articulate clear reasons why the presently claimed invention, as a whole, would have been obvious over the '617 patent. Numerous jumps in reasoning would have been required to arrive at the present invention after reading the '617 patent, one of which is expressly taught as being avoided by the '617 patent. The '617 patent therefore does not provide an incentive or apparent reason for a person skilled in the art to modify the '617 patent in a manner needed to arrive at the presently claimed invention. In summary, process claims 7 and 10 are patentable over the cited '617 patent, and the rejection should be withdrawn.

Claims 11-13, which depend from claim 7, also stand rejected under 35 U.S.C. §103 as being obvious over the '617 patent. For the reasons set forth above, it is submitted that claims 11-13 also are patentable over the '617 patent for same of the reasons that claims 7 and 10 are patentable over the cited '617 patent.

The totality of the examiner's reasoning supporting this rejection is found at page 6 of the Office Action stating:

"7. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barthold et al. (US 5,472,617).

Set forth from paragraph 7 of instant office action, the process of Barthold et al. is very similar to the process of claims 11-13.

The difference between the invention of claims 11-13 and Barthold et al. is that Barthold et al. do not disclose minor variations of the process as claimed.

Nevertheless, Barthold et al. (col. 8, line 65 to col. 9, line 40; col. 9, Table 1; col. 11, Table 3) have clearly disclosed a process for preparing the compound ester F as claimed. Therefore, the examiner believes that it would have been obvious to one of ordinary skill in art to use "routine experimentation" technique to optimize the process of Barthold et al. to obtain the invention of claims 11-13. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955)."

The examiner has totally failed to articulate reasons why claims 11-13 would have been obvious over the '617 patent, except for a conclusory statement relating to "routine experimentation" and "very similar" processes. The examiner is directed to the recent *KSR*

Int'l Co. v. Teleflex decision discussed above. The mandate of the United States Supreme Court in this decision is that the Patent Office *must* make it clear in the record with *facts* and *reasoning* that the teaching-suggestion-motivation to modify the reference exists. As emphasized by the Supreme Court, "rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR Int'l Co.* 127 S.Ct 1741.

The examiner also is reminded of the May 3, 2007 memorandum from the Deputy Commissioner for Patent Operations, which stated at page 2 (emphasis in original):

"(4) The Court noted that the analysis supporting a rejection under 35 U.S.C. § 103(a) should be made explicit, and that it was "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements" in the manner claimed. The Court specifically stated:

Often, it will be necessary...to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an **apparent reason** to combine the known elements in the fashion claimed by the patent at issue. To facilitate review, this analysis **should be made explicit**.

KSR, slip op. at 14 (emphasis added).

Therefore, in formulating a rejection under 35 U.S.C. § 103(a) based upon a combination of prior art elements, it remains necessary to identify the reason why a person of ordinary skill in the art would have combined the prior art elements in the manner claimed."

It is submitted, therefore, that the present rejection does not provide any articulated reasoning to support a conclusion of obviousness of claims 11-13 over the '617 patent, and that this rejection should be withdrawn.

In addition, claim 13 recites a molar ratio of (meth)acrylic acid to alkoxyolated glycerol in step a) of at least 15:1. The '617 patent absolutely fails to teach, suggest, or even consider such a mole excess of (meth)acrylic acid in the reaction mixture, as stated above. In contrast, the '617 patent, at column 4, line 63 through column 5, line 1 specifically teaches that a molar excess of (meth)acrylic acid *should be* avoided. This alone demonstrates the nonobviousness of claim 13 over the '617 patent, and provides an additional reason why the rejection should be withdrawn.

Claims 14-16 stand rejected under 35 U.S.C. §102(b) as being anticipated by the '617 patent. Applicants traverse this rejection.

Claim 16 depends from claim 7, and is patentable for the reasons set forth above with respect to the rejection of claims 7 and 10 over the '617 patent.

With respect to claims 14 and 15, each claim, as amended, recites a postcrosslinking step and a drying step. The '617 patent fails to disclose either of these steps, let alone both. The examiner again is reminded that a reference must disclose *each* and *every* claimed feature *in complete* a detail as contained in the claim. See MPEP §2131. Accordingly, because differences exist between claims 14 and 15 and the '617 patent, a rejection of the claims under 35 U.S.C. §102(b) cannot be maintained over the '617 patent.

It is further submitted that the differences are nonobvious differences. In particular, the '617 patent fails to teach a postcrosslinking step or a drying step, and provides no apparent reason for a person skilled in the art to perform such steps. It must be noted that an SAP is postcrosslinked to improve fluid absorption properties. The polymers of the '617 are not SAPs, but oil demulsifiers. Thus, an improvement of fluid absorption properties is neither considered nor addressed by the '617 patent. In summary, claims 14 and 15 are patentable over the '617 patent.

Claims 18 and 21-23 stand rejected under 35 U.S.C. §102(b) as being anticipated by the '617 patent. Applicants traverse this rejection. The patentable differences between claim 21 relating to ester F of claim 1 and the '617 patent has been discussed above.

With respect to ester F of formula Ia of claim 18, the '617 patent specifically discloses a ratio of alcohol to alkoxides of from 1:120 to 1:5. See '617 patent at column 3, lines 64 and 65. Stated alternatively, the '617 patent recites a sum 5 to 120. In contrast, claims 18 and 21 recite a sum of p₁ + p₂ + p₃ is 3 or 4. Accordingly, a difference exists between the '617 patent and present claims 18 and 21-23 such that a rejection under 35 U.S.C. §102(b) cannot be maintained.

In addition, the differences between claims 18 and 21-23 and the '617 patent are nonobvious differences. The '617 patent generally teaches monofunctional and multifunctional alcohols at column 3, lines 36-53. Glycerol is disclosed among more than specific 20 alcohols. The '617 patent also discloses 15 alkoxylated alcohols at Table 1 of the reference. *No* disclosed alkoxylated alcohol in the examples is glycerin, and the ratio of alcohol to alkylene oxide is far above the ratio of 1 to 3 and 1 to 4 recited in claims 16 and 21, e.g., Example a3 of the '617 patent has a ratio of 1 to about 40, Example a4 has a ratio of 1 to about 36. Example a5 has a ratio of 1 to about 66, and Example a6 is 1 to about 40.

The specific teachings of the '617 patent therefore are directed to alkoxylated alcohols containing a high amount of alkylene oxide. Persons skilled in the art, after reading the '617 patent, would have had no apparent reason to select glycerin from the long list of disclosed alcohols, then alkoxylate with only 3 or 4 ethylene oxide and/or propylene oxide units with any reasonable expectation that the resulting compounds could serve as a crosslinker for an SAP that demonstrates unexpected benefits with respect to reducing the amount of residual monomers (see examples). Accordingly, it is submitted that claims 18 and 21-23 would not have been obvious to a person of ordinary skill in the art in view of the '617 patent.

With respect to the examiner's contentions regarding the term "diluent" in claim 22, claim 10 of the '617 patent refers to an oil/water mixture to which the copolymer is added to *effect* demulsification. The "crude oil and water mixture" is *not* present in the composition prior to polymerization as recited in claim 21, but is present after polymerization. See '617 patent, column 8, lines 40-61. Contrary to a statement in the Office Action at page 9, the examiner's reasoning has *no* basis. Claim 22 previously was clarified to recite that the diluent is water and/or a water-soluble organic solvent.

With respect to the examiner's comments regarding the '617 patent at column 1, lines 52-62, this portion of the '617 specification is directed to *prior* resins that demonstrates *disadvantages*, such as gelling. The '617 patent disclosure is not directed to the resins disclosed at column 1, lines 52-62, but to resins that may *overcome* these disadvantages. The '617 patent therefore is directed to resins that do *not* gel, in contrast to the presently claimed SAPs.

In summary, differences exist between the '617 patent and claims 18 and 21-23 such that the rejection under 35 U.S.C. §102(b) cannot be maintained. In addition claims 18 and 21-23 would not have been obvious over the '617 patent under 35 U.S.C. §103.

Claims 26, 27, 29, 30 and 32-34 stand rejected under 35 U.S.C. §102(b) as being anticipated by, and alternatively under 35 U.S.C. §103 as being obvious over, the '617 patent. Applicants traverse this rejection.

All the examiner's contentions supporting this rejection have been addressed above, e.g., gels and "diluents", and it is submitted that claims 26, 27, 29, 30, and 32-34 are patentable over the '617 patent for the same reasons claims 7, 10-16, 18, and 21-23 are patentable over this reference under both 35 U.S.C. §102(b) and §103, and that this rejection should be withdrawn.

All pending claims are in a form and scope for allowance. An early and favorable action on the merits is respectfully requested.

Application No. 10/516,702
Response dated January 25, 2008
After Final Office Action of October 18, 2007

Docket No.: 29827/40663

Should the examiner wish to discuss the foregoing, or any matter of form in an effort to advance this application toward allowance, the examiner is urged to telephone the undersigned at the indicated number.

Dated: January 25, 2008

Respectfully submitted,

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